foregoing and a circle drawn around the aurora-pole by a radius 28° long. The interior circles of the glory are not seen in this region, but we see sometimes their rays and the exterior rings, less common and less regular. The quiet aurora is rare in this region, but the aurora-storms and the beautiful drapery-auroræ are most usual.

It is obvious that the frequency of auroræ must be different in the different regions represented on the map (Fig. 7). They must be most frequent in region IV., as in this we may see both the common glory and the drapery-auroræ, which arise at a greater distance from the aurora-pole, and probably nearer to the surface of the earth. Towards the north this region is bordered by a belt where auroræ must be less frequent, and which, in its turn, includes another belt of a maximum frequency of auroræ, where the arc-aurora must be most common; but the drapery-auroræ are below the horizon. In the circular region around the aurora-pole itself, even the common arc is below the horizon, and therefore auroræ must be rare. Therefore Nordenskjöld observes that his map is much like that of the frequency of auroræ published by Prof. Fritz (*Petermann's Mittheilungen*, 1874, p. 374). Besides, the visibility of auroræ depends upon the position of the sun, and Nordenskjöld observes that it seems that the aurora-arc disappears, or at least becomes invisible, as soon as the sun's rays illuminate that part of our atmosphere where the aurora-ring has its seat. Calculating on this principle a table of the hours when the aurora-arc must appear and disappear for an observer stationed at the *Vega's* winter-quarters, he finds that the disappearance of the aurora in the morning is in accordance with this supposition, whilst its appearance in the evening seems to be independent of this cause, as it used to appear about nine o'clock.

As to the relation of auroræ to terrestrial magnetism, this will be better seen when all the observations of the *Vega* are published. But Nordenskjöld remarks that the "common arc," so long as it was not transformed into more intense forms of aurora, did not exert on the magnetic needle any influence which might not have been included in the usual observations of variations. But the more intense auroræ exerted such an influence, and when the aurora was on the increase, the declination showed a small tendency to a deviation towards the west, whilst the intensity varied much: the horizontal component diminished, and the vertical one increased, especially as the auroræ approached the zenith.

Nordenskjöld tried also to make some spectral observations on auroræ, and he observed the usual greenish-yellow line, together with a bluish-grey spectrum towards the violet end. But the observations were rendered so difficult by the fearful frosts that he could not succeed in making more detailed measurements.

He concludes his most interesting memoir on auroræ with the following words:—"When writing this contribution to our knowledge of the position of auroræ in space, I had at my disposal but few former works on this subject. I must especially regret that our very rich library of travel did not contain the works of Mairans, Bravais, Fritz, Loomis, &c. After returning home I discovered that a method of determining the height of auroræ similar to mine was proposed by Fr. Chr. Mayer (Comment. Acad. Scient. Petropolitanæ, part 1, p. 351, St. Petersburg, 1728), and applied, among others, by Torbern Bergman (*Kgl. Vet. Akad. Handlingar*, xxv., Stockholm, 1764, pp. 193 and 249; xxvii. 1766, p. 224). But Bergman arrived at uncorrect figures, as he supposed that the centre of the aurora ring is situated on the radius of the earth which passes through the pole. Besides, he had no observations upon the *common arc*, and had only measurements of the larger, less regular arcs which are seen from more southern regions. Knowing how little time remains for personal investigation to one who returns from a long exploration in unknown tracts, I have preferred to publish at least a general account of the most important features of the observations I made at the *Vega's* winter-quarters than to postpone the publication for an indefinite time. The want of a larger perusal of former literature upon the subject will probably be excused to some extent by the circumstance that, when writing this, I had the opportunity of continuously comparing the sketch I have tried to draw with the natural phenomena themselves." P. K.

NOTES

THE second ascent of Ben Nevis for the winter was made on Saturday last by Mr. Livingstone, Fort William, to read the thermometer at the station of the Scottish Meteorological Society on the top of the mountain. The depth of snow was found to be much greater at the top than on the occasion of the previous visit. On the edge of the precipices the snow lay to a depth of fifteen to twenty feet, the Ordnance Survey Cairn barely overtopping it, and the hut built for the accommodation of Mr. Wragge during summer being almost completely buried under the snow-wreaths. The depth of the snow rapidly diminished in the direction of the protecting-cage for the thermometers, outside which it was only three feet deep. Inside the cage, fortunately, there was scarcely any snow, thus leaving the registering thermometers free. The maximum thermometer read 32°·1, and the minimum 13°·2, these being the extremes of temperature at the top since the date of the previous visit on December 3 (NATURE, vol. xxv. p. 135). The temperature at the time of the visit, 1 p.m., was 31°·4 in the cage, and by *thermomètre froid*, 33°·1. The spring near the summit was deeply buried in snow, but the spring at 2500 feet high was open, and the temperature of its water was 37°·3, the air at the same place being 41°·0. The temperature of the water of the Lake was 42°·1, and that of the air at the same height 44°·8. At Fort William the maximum temperature for the same day was 53°·5, and the minimum in December 23°·5, and in January 26°·8. Hence the temperature at the top had fallen only about 10°·0 lower than the lowest at the level of the sea during the winter. The day was very favourable for the ascent, which was made without difficulty. Though it had rained heavily at Fort William on the Friday, no fresh snow had fallen on the Ben, and as the afternoon sun softened the snow somewhat, the descent was very easy, the first 2000 feet being done in thirty-three minutes. The observations made on these two occasions show that as the snow accumulates to such great depths near the edge of the precipice, the observatory it is proposed to erect should be built at some distance from it.

THE death is announced, on February 8, of Prof. Joseph Decaisne, the eminent naturalist, at the age of seventy-five years.

WE regret to announce the death of Adam von Burg, vice-president of the Vienna Academy; he died on February 1, aged eighty-five. He was well-known by his mathematical and mechanical papers, especially by his "Compendium der höheren Mathematik" and "Compendium populæren Mechanik und Maschinenlehre."

LET us remind our readers that in connection with Captain Abney's lectures there is an interesting Exhibition of Photographic Apparatus and Appliances at the Society of Arts, of which a Catalogue has been issued. The exhibition will be open till February 25 from 10 to 4, and on Wednesday evenings from 6 to 10. Any one interested in photography may obtain admission by applying to the Secretary of the Society of Arts. To-night there will be a demonstration of photography with artificial lights likely to be of great interest.

COLONEL BROWNE and Mr. Simmons have decided to attempt a balloon journey across the Channel from Canterbury, on March 2, or as soon after that date as the wind permits.

THE Mineralogical Museum of the Florence Institute for Superior Studies has become possessed of two remarkably fine specimens of tourmaline and beryl from the granite vein of San Piero, in Campo in Elba. These are represented by chromo-lithograph plates in the *Rivista Scientifico-Industriale* (January 15). The one granitic piece, 30 cm. long, and 18 cm. broad, has 50 tourmalines (mostly of bottle-green colour) implanted in it, all of large size (some 62 mm. long and 12 mm. thick); there are also two beryls and a small crystal of zircon. The other specimen is larger, measuring 40 cm. by 20 cm.; it has 132 tourmalines, 9 beryls, and 3 zircon groups, besides a large quantity of orthoclase, quartz, and albite crystals.

A NEW feature of the journal just named is the addition of summaries, in French, German, and English, of the papers in that portion of the review called the "Giornale del Naturalista." The English, we may remark, is of a somewhat entertaining nature.

AN ascent was made from the La Villette Gasworks, Paris, on Thursday, February 9, with the *Vulcan* balloon. The balloon having ascended to an altitude of 3000 feet, the thermometer, exposed in the sun, showed a temperature of 20° C., and the reading was published in the *Ville de Paris* and other papers of the 10th. It has elicited some astonishment, the weather being rather cold and cloudy. But on the 11th the grass thermometer of Montsouris Observatory exhibited a temperature of 17° C., and a total change of weather was observed. Rain fell in the night of the 11th-12th for the first time after a space of thirty-five continuous days of uninterrupted and unprecedented dryness. The navigation of the Seine had become difficult owing to the low level of the water. During this extraordinary period the electrometer of Montsouris gave without any interruption low readings, and with the exception of a very few instances it had been always positive, although the weather had been foggy for twenty-two days.

AT the annual general meeting of the Teachers' Training and Registration Society, and of the Bishopsgate Training College the other day, Prof. Goldwin Smith took laudable advantage of the opportunity to impress on those present what science teaching really means. "In respect of the teaching of science," he said, "he had constantly brought before him the wide gulf fixed between the two different kinds of what persons call knowledge. The one was a mere learning to repeat a verbal proposition, and the other was knowing the subject at first hand—a knowledge based upon a knowledge of the facts. That which they had constantly to contend against in the teaching of science in this country was that teachers had no conception of that distinction, for they thought it quite sufficient to be able to repeat a number of scientific propositions and to get their pupils to repeat them as accurately as they themselves did. If he might offer one suggestion to the governing body of the college, it was that so far as they taught science at all they should aim at giving real and practical scientific instruction; that it should be confined to those things about which there was no dispute; and that the teacher should be instructed that his business in teaching was to convey clear and vivid impressions of the body of facts upon which the conclusions drawn from those facts were based."

UNDER the auspices of the Dundee Naturalists' Society, a Gilchrist Course of Science Lectures for the People, is now being delivered in Dundee, Perth, Brechin, Montrose, and Kirkcaldy; and in several instances the audiences have only been limited by the size of the lecture-halls. At Dundee and Perth, Mr. Wm. Lant Carpenter's lectures on the Transmission of Power by Electricity were practically illustrated (1) by the Northern Electric Light and Power Company, and (2) by Messrs. Pullar, of the Perth Dye-works, who employ ten dynamos for electric lighting.

ATTENTION has recently been drawn to the commercial value of the Quillaia Tree (*Quillaja saponaria*), a native of Chile, the bark of which has been known for a considerable time both in this country and on the Continent, for the saponaceous principle which it contains. In consequence of the trees having been cut down to obtain the bark there is much reason to fear that the supply may fail, particularly if the demand increases. Quillaia bark, it seems, is very extensively used by wool and silk manufacturers both in this country and in France, in consequence of its efficacy as a powerful cleansing agent. Our contemporary, the *Colonies and India*, in drawing attention to this tree, remarks "that a decoction prepared by placing a small piece of this bark and soaking it overnight in water will remove in a minute or two grease from articles of clothing and leave the cloth clean and fresh as if it was new. It may also be used for cleansing hair-brushes and other similar purposes, under conditions in which soap and other alkalies are powerless. It is also suitable for a hair-wash, and is said to be largely used by French hairdressers, though the mode of preparation is kept secret. Such a tree ought to be invaluable in Australia, New Zealand, Cape Colony, and other colonies where wool growing is a staple industry." Among the uses to which this bark is put may be mentioned that of a preparation for giving an artificial froth or head to ales, a very small quantity put into beer that has become dead causing it to be covered with froth. The bark occurs in commerce in two forms, that of irregular pieces as taken from the tree, and in the form of powder.

THE Clarendon Press will publish very shortly a "Treatise on Rivers and Canals, relating to the Control and Improvement of Rivers, and the Design, Construction, and Development of Canals," by Mr. L. F. Vernon-Harcourt, M.A., C.E. The author describes the physical characteristics of rivers; the methods and formulæ for measuring their discharge; and the various works, structures, &c., for improving rivers and for forming canals. It contains an account of some of the most important inland canals, and descriptions of celebrated ship-canals. The causes and means of prevention of floods in river-valleys are fully discussed. The past and present conditions of several of the most important rivers at home and abroad are described, together with the successive works of improvement carried out on them, and the results achieved. Each of the various subjects treated of is concluded by a consideration of the value of the different works or methods referred to, and the principles upon which they are based. The book is copiously illustrated with woodcuts and twenty-one large lithographed plates showing most of the works, &c., described.

UNDER the title of "Land and Freshwater Mollusca of India," Col. Godwin-Austen proposes to publish lithographed plates of species of land and freshwater mollusca inhabiting India, Burmah, and adjacent islands in the Indian Ocean. The plates are intended to be of the same size (quarto) as the "Conchologia Indica" of Messrs. Theobald and Hanley, and thus will form a supplement to it. It will include species not published in that work and the numerous species that have since been discovered. Many of the minute forms that have not been sufficiently enlarged in the above work, and which are of little use for identification (for example, those in the genera *Alycæus*, *Diplommatina*, &c.), will be reproduced. Whenever it is possible, drawings of the animals will be given; together with the anatomy of such parts as the odontophore, generative organs, &c., which it is hoped will lead eventually to a better classifica-

tion of the land shells of the region. Each plate will be accompanied by an explanatory page of letterpress. With each issue of the plates, full description of the genera and species, with synonomy and their distribution, will be given in separate pamphlets, 8vo, similar in type to the *Proceedings* of the Zoological Society of London. Col. Godwin-Austen hopes to secure the co-operation of Messrs. H. F. and W. T. Blanford, Sylvanus Hanley, William Theobald, Geoffrey Nevill, Dr. J. Anderson, and others interested in East-Indian conchology. The work cannot be brought out at regular intervals; but whenever a few plates are ready a part will be issued, and it is hoped that at least two parts may be completed during the year. Intending subscribers should communicate with Col. Godwin-Austen, Deepdale, Reigate, Surrey.

IN the January number of the *Archives des Sciences* Professors Dufour and Amstein describe a simple registering barometer, now in use in the Meteorological Observatory of Lausanne. It depends on displacement of the centre of gravity of a glass tube containing mercury. The form of the tube may be described as that of an L leading down to a U by a vertical portion. The lower end is open. The tube swings in the plane of its angles on a horizontal axis placed above the centre of gravity; with increased barometric pressure it inclines to the right, with decreased pressure to the left; and these movements are recorded by means of a style attached to the U part and applied to a moving strip of paper. By a simple contrivance the pendulum of a clock is made to impart a slight shock every second swing to the tube, so as to destroy any adherence of mercury. The instrument is easily made, and proves very sensitive and reliable.

MÜLLER'S imitation of the phenomena of geysers, by means of a vertical tube filled with water and heated in the bottom and about the middle, is open to the objections that we may not assume two places of heating in the actual geyser, and that the eruption of water is only producible once. Herr G. Wiedemann has, therefore, contrived what seems a more suitable apparatus (*Wied. Ann.*, No. 1). It consists of a flask attached to a stand, and having a caoutchouc stopper which supports two glass tubes; one tube 1 cm. wide (beginning flush with the undersurface of the stopper) reaches upwards about 70 cm., projecting through a small basin, and ending with an aperture of diminished section. The other tube (about 3 mm. to 4 mm. wide) passes obliquely upwards, and enters the side of a jar which is about on a level with the top of the vertical tube; at the other end it passes through the stopper, and is bent a little upwards near the bottom of the flask. The cistern is filled with water, and, a Bunsen burner being brought under the flask, the varied action of geysers is very well imitated

MR. ERNEST SATOW, Secretary to our Legation in Tokio, and Lieut. Hawes, have recently produced a work of very great general value on Japan. Although it is entitled "Handbook for Travellers in Central and Northern Japan," and is written after the model of Murray's celebrated Guide Books, it will be found useful to persons who never intend visiting that country. It will be found indispensable to compilers of encyclopædias, gazetteers, and other works of reference. Besides the dry details of routes for travellers, it gives the history of the principal towns and statistical information respecting each. The large mixture of history and legend makes the book tolerably amusing reading even for those unacquainted with Japan. The difficulty of writing a work of this kind for a Japanese scholar cannot be great, as Japanese literature has from time immemorial possessed voluminous guide-books and topographical works. Every Japanese province and district has its own guide, generally containing statistical, geographical, historical, and legendary information. These are illustrated with rude woodcuts representing the principal scenes, temples, idols, &c. The great guide to old Yedo, called the "Yedo Meisho," is an exhaustive work in about fifty volumes. In addition, every road has its little map giving the distances between the various places, the principal inns, the places of interest near the route, and other information of use or interest to travellers. These are either given *gratis* at the inns, or are purchased for about a halfpenny. A tolerably extensive collection of Japanese guide-books is to be found in the British Museum. Although Messrs. Satow and Hawes doubtless used such works as these; the various routes and places mentioned in their volume are evidently described from personal knowledge.

IN a note that appeared in the last number of the Russian Chemical and Physical Society's *Journal*, Mendeleeff points out that Berthelot's hyposulphuric acid is formed under the conditions that generally yield peroxides, peroxide of hydrogen being formed at the same time. It appears to have all the properties of true peroxides, and even combines with water in a similar manner to Barium peroxide. As it does not give salts with bases, the name of acid which is given to it is inexact, and this inexactitude has arisen from a general deficiency of our nomenclature of oxygenated compounds. It is usually admitted that—as in the case of manganese—we have, first, bases, then peroxides, and then anhydrids of acids. But it is well-known that the bioxides of manganese, lead, and others, do not have the characters of peroxides; thus it would be better to call them simply bioxides; true peroxides belong to the type of the peroxide of hydrogen, as true bases and acids belong to the type of water. The highest known oxygen compound of sulphur, S_2O_7, corresponding to Cr_2O_7, which should be termed peroxide of chromium, should be termed sulphurperoxide. Regarded in this way the peroxides generally are bodies in a more oxidised condition than that in which they yield either bases or anhydrides of acids. The peroxides of Barium, sulphur, and hydrogen are the extreme oxidised compounds of these bodies known, and have comparatively neutral qualities.

SOME interesting facts regarding the influence of heat on the molecular structure of zinc are given in a recent paper by Herr Kalischer to the Berlin Chemical Society. Rolled zinc becomes crystalline when strongly heated, and the author recommends as a lecture experiment dipping a heated strip of zinc for half a minute in concentrated sulphate of copper solution, then washing off the precipitated copper with water, whereupon distinct signs of crystallisation appear. The effect is not merely superficial; plates $\frac{1}{20}$ mm. to 5 mm. thick (no thicker were tried) proved crystalline throughout. The mode of cooling (quick or slow) has no marked influence. Zinc when heated, loses its ring, and if bent gives a sound like the "cry" of tin; this fact, with the crystallisation, confirms the view that the cry of tin is also due to crystalline structure. Zinc must be heated over 150° C. to show crystallisation on corrosion, but the "cry" is perceptible at about 130°, and increases with the temperature. As the tenacity of rolled zinc diminishes with crystallisation, and the cry undoubtedly proves incipient crystallisation, some important deductions for technical work are indicated. Herr Kalischer finds the ratio of the specific gravity of zinc in crystalline to that in ordinary state is 1·0004 : 1 or an increase, for the former of about $\frac{4}{100}$ per cent. The ratio of electric resistance of zinc wire ordinary to crystalline = 1·0302 : 1, or a decrease for the latter of about 3 per cent. Herr Kalischer was unable to prove so fully crystallisation in copper, brass, iron, and aluminium, but here were indications of it in some of these.

THE French Commission appointed by the Gambetta Cabinet to report on the position of artistic industries, has not been kept in operation by the new government, but transferred from the French Board of Trade to the Minister of Public Instruction; M. Ferry has been appointed its president. The Commission will appoint special committees, which will visit the principal cities of France.

EARTHQUAKE-SHOCKS were felt on January 23 at Schattwald (Tyrol) at 10.45 a.m., direction west-east, and at Vils, Tannheim (Tyrol), and Oberdorf (Bavaria), at 8 p.m. A shock of earthquake occurred at Bucarest in the night of January 25-26, at 12.30, and at Tecucin and Marasesci (Roumania) on January 26 at 12.25 a.m. On February 5 a shock of earthquake was experienced at Nagy Iglod and Dees (Hungary) at 3.45 p.m., direction north-east-south-west.

THE additions to the Zoological Society's Gardens during the past week include a Malbrouck Monkey (*Cercopithecus cynosurus* ♂) from East Africa, presented by Mr. R. A. St. Leger; a Chacma Baboon (*Cynocephalus porcarius* ♂) from South Africa, presented by Mr. W. F. Battersby; an Amherst Pheasant (*Thaumalea amherstiæ* ♂) from Szechuen, China, presented by Mr. John Biehl; two Crocodiles (*Crocodilus*, sp. inc.) from South Africa, presented by Capt. D. King, R.N.; a Californian Quail (*Callipepla californica* ♀) from California, deposited; two Eagle Owls (*Bubo*, sp. inc.) from South Africa, on approval; a Red-fronted Lemur (*Lemur rufifrons* ♂) from Madagascar, a Common Otter (*Lutra vulgaris*) from Ireland, four Warty-faced Honey-eaters (*Meliphaga phrygia*), two Wattled Ducks (*Biziura lobata* ♂ ♂) from Australia, a Pink-footed Goose (*Anser brachyrhynchus*), European, purchased; a Hybrid Tapir (between *Tapirus roulini* ♂ and *Tapirus americanus* ♀), born in the Gardens.

OUR ASTRONOMICAL COLUMN

THE ACADEMY OF SCIENCES, PARIS.—At the annual public sitting of this body on February 6, recommendations of a committee consisting of MM. Faye, Lœwy, Mouchez, Janssen, and Tisserand, with respect to the award of the astronomical prizes of 1881, were adopted by the Academy. The Lalande Prize was awarded to Mr. Lewis Swift, of Rochester, New York, who in the course of four years has discovered seven comets, one of them of short period. The committee remarked that we have now a family of seven periodical comets, of which the aphelion distances do not differ much from the mean distance of Jupiter, and this great planet appears to have drawn them into our system. There are doubtless interesting researches to make on this point of theoretical astronomy: "La première chose à faire est de recueillir de nombreux matériaux; aussi convient-il d'encourager les travailleurs qui consacrent leurs veilles à la recherche des comètes."

The Valz Prize was awarded to Mr. David Gill, H.M. astronomer at the Cape of Good Hope, for his researches on solar parallax, and more especially for the results of his expedition to Ascension, for the observation of Mars at the close opposition of 1877. Mr. Gill has twice applied what is known as *the diurnal method* (first employed by Cassini two centuries since) to observations of Mars with the heliometer. The Ascension expedition is pronounced to have been a great success, twenty-two series of observations of Mars having been obtained, each of which affords a value of the parallax. The discussion of the observations proves that they were made with a high degree of precision, and the committee conclude that "la valeur qui en résulte pour la parallax du Soleil paraît devoir être l'une des plus exactes."

The prizes offered for the year 1882 are those founded by Lalande (a gold medal of 540 francs), by Valz (460 francs), and that instituted in 1863 by the Baronne de Damoiseau. The latter is continued for the same subject as on several previous occasions, when no adequate response was received, and the terms are thus stated:—"Revoir la theorie des satellites de Jupiter; discuter les observations et en déduire les constantes qu'elle renferme, et particulièrement celle qui fournit une determination directe de la vitesse de la lumière; enfin construire des Tables particulières pour chaque satellite." Competitors are desired to give particular attention to one of the conditions—that relating to the determination of the velocity of light. The value of the prize is 10,000 francs; memoirs received till June 1, 1882.

THE TOTAL SOLAR ECLIPSE OF MAY 17.—It appears that astronomy is to be once more indebted to the scientific spirit and munificence of M. Bischoffsheim, the banker of Paris (a valued friend of the late M. Leverrier), who, according to the *Times*, has undertaken the expense of a mission to Upper Egypt, for the observation of this phenomenon. Upper Egypt is about the only accessible locality available on this occasion, and in that district the duration of the total phase will be less than 1¼ minute. It will therefore be necessary for the observer to be situate close upon the central line of eclipse to secure a sufficient duration for any useful purpose. Hansen's Lunar Tables, as is well known, require correction at this time, but it happens that the Lunar Tables adopted in the "American Ephemeris" give the moon's place in pretty close agreement with that resulting from Hansen's, with Newcomb's corrections applied, and the track of total eclipse given in detail in that Ephemeris may be taken as almost as reliable a prediction as it will be possible to make. We extract as follows:—

Greenwich Mean Time	N. Limit Long.	E. Lat.	N.	Central Line. Long	E. Lat.	N.	S. Limit. Long.	E. Lat.	N.
h. m.	° ′	° ′		° ′	° ′		° ′	° ′	
May 16 ... 18 20 ...	28 39·9 ...	25 17·5		28 55·8 ...	25 8·0		29 11·7 ...	24 58·5	
18 25 ...	31 21 4 ...	26 42·5		31 37·0 ...	26 31·9		31 52·6 ...	26 21·3	
18 30 ...	33 50·8 ...	28 0·6		34 6·1 ...	27 48·9		34 21·4 ...	27 37·2	
18 35 ...	36 11·5 ...	29 12·8		36 26·4 ...	29 0·2		36 41·3 ...	28 47·6	

The duration of totality upon the central line, assuming the sun's semi-diameter 15′ 50″·8, and the moon's geocentric semi-diameter 15′ 51″·9, will be at the above Greenwich times respectively, 1m. 6·3s., 1m. 12·0s., 1m. 17·1s., 1m. 21·8s.: an observer proceeding beyond the intersection of the central line with the Nile, say to Ras Mahomed at the extremity of the peninsula of Sinai, will not therefore secure an increase of ten seconds in the length of the total obscuration. We hear reports of an intention on the part of several American astronomers to visit Egypt for the observation of the eclipse, and hope this country may not be unrepresented.

THE TRANSIT OF MERCURY, NOVEMBER 7, 1881.—This phenomenon appears to have been well observed in Australia. If the times of internal contacts are founded upon Leverrier's tables of sun and planet, and the semi-diameters he deduced from a discussion of the transits of Mercury to 1845, the Melbourne observations indicate that the computed time of first internal contact is too early by 24·5s., and that of last internal contact by 26·0s. According to the observations of that able amateur, Mr. Tebbutt, at Windsor, N.S.W., these errors are respectively 20·8s. and 27·3s. The calculations of the American ephemeris, where Leverrier's old theory of the planet (*Connaissance des Temps*, 1848) is adopted, exhibit much larger errors, at least as regards the exterior contacts, for which alone the formulæ of reduction for parallax are given. The experience is therefore the same as at the previous transit on May 6, 1878.

GEOGRAPHICAL NOTES

AT the meeting of the Geographical Society on Monday last, Sir Richard Temple delivered a lecture which nominally dealt with the geography of the birthplace and cradle of the Mahratta power in Western India, but practically became rather a disquisition on the history of the race, and much of the information furnished will, no doubt, have been familiar to readers of Meadows Taylor's work.

SOME further fragments of news have come from the rescued members of the *Jeannette* expedition. Every effort is being made to find Captain De Long and his companions, but at this season, and in such a region as the Lena mouth, the searchers have a hard task before them. Lieut. Danenhauer sends some interesting notes on the course taken by the *Jeannette*:—"We discovered Jeannette Island May 16, 1881 (?), in lat. 76° 47′, long. 158° 56′ E. It was small and rocky, and we did not land upon it. Henrietta Island was discovered May 24, in lat. 77° 8′, long. 157° 43′ E. We visited it, and found it to be an extensive island, animals scarce, many glaciers. A very large island, found in lat. 76° 38′, long. 148° 20′ E. was named Bennett Island. On it we found many birds, old horns, driftwood, and coal; no seal or walrus; strong tidal action; bold and rocky. The south cape we named Emma. The general health of the crew during twenty-one months was excellent, no scurvy. We used distilled water, bear and seal meat twice a week, but no rum. Divine service was held regularly. We took plenty of exercise, and everybody hunted. Game was scarce, but we got thirty bears, 250 seals, and six walrus; no fish or whales seen. All possible observations were made during the